ETABS 2016 Steps

A] MODEL BUILD-UP

Step-01: Define Design Code and Units

Step-02: Define Grid & Story Data. Edit all stories data.

Step-03: Define Material Properties for Concrete, Rebar, and Masonry etc.

Step-04: Define Section Properties of Beams, Columns, Slab, Stair, Walls, Mat, Ramp etc.

Step-05: Define Static Loads pattern, Load cases & Load Combination.

Step-06: Draw Model.

Step-07: Assign Loads.

- Gravity Loads to Floors, Beams, Stairs, Water Tanks Slab, Mat, Ramp.
- Assign Wind loads.

Step-08: Define & Assign Diaphragm.

Step-09: Assign Support

Step-10: Define Mass Source.

Step-11: Messing of Shells and Frames.

Step-12: Assign Auto Edge Constraints.

Step-13: Assign design Strip of Slab.

Step-14: Check for model and perform necessary corrections if required.

B] MODEL ANALYSIS

Step-15: Define and assign Pier & Spandrel levels for all walls

Step-16: Define Frame-Shell Sway Properties & Seismic Categories.

Step-17: Define Property Modifiers of Frames (beams and columns) and Stiffness Modifiers of Shells (slab & walls)

A. **Slab:**

- Bending m1 1 Modifier = 0.25
- Bending m2 2 Modifier = 0.25
- Bending m1 2 Modifier = 0.25
- Others value = 1.00

B. Column:

- Torsional Constant = 1.00
- Moment of inertia about2 = 0.70
- Moment of inertia about3 = 0.70
- Others value = 1.00

C. Beam:

- Torsional Constant = 0.01
- Moment of inertia about 2 = 0.35
- Moment of inertia about 3 = 0.35
- Others value = 1.00

D. Wall:

- Bending m1 1 Modifier = 0.35
- Bending m2 2 Modifier = 0.35
- Bending m1 2 Modifier = 0.35
- Others value = 1.00

Step-18: Run Analysis of the corrected model.

C] MODEL DESIGN

Step-20: Design of the Slab

- Define bar size, slab type and design method.
- Select stories for design

Step-20: Design of the Concrete Frame Sections

- Perform necessary corrections if required.
- Verify Analysis vs. Design section.
- Verify all members passed
- Check maximum Storey Displacement.
- Check Storey Drift.
- Check Storey Stiffness: weak & soft storey.
- Check Storey Overturning Moment.

Step-21: Design of the Shear Walls

- Assign Pier Sections Design Categories for all walls.
- Check the Shear Wall Capacity.
- Verify Analysis vs. Design section.

Step-22: Design of Foundation with the help of SAFE 2014.

Step-23: Detailing of the Reinforcement with the help of AUTOCAD.